

Warm Up

Write the algorithm for the following translations.

- 1) translating a triangle 10 units up and 3 units left

$$(x-3, y+10)$$

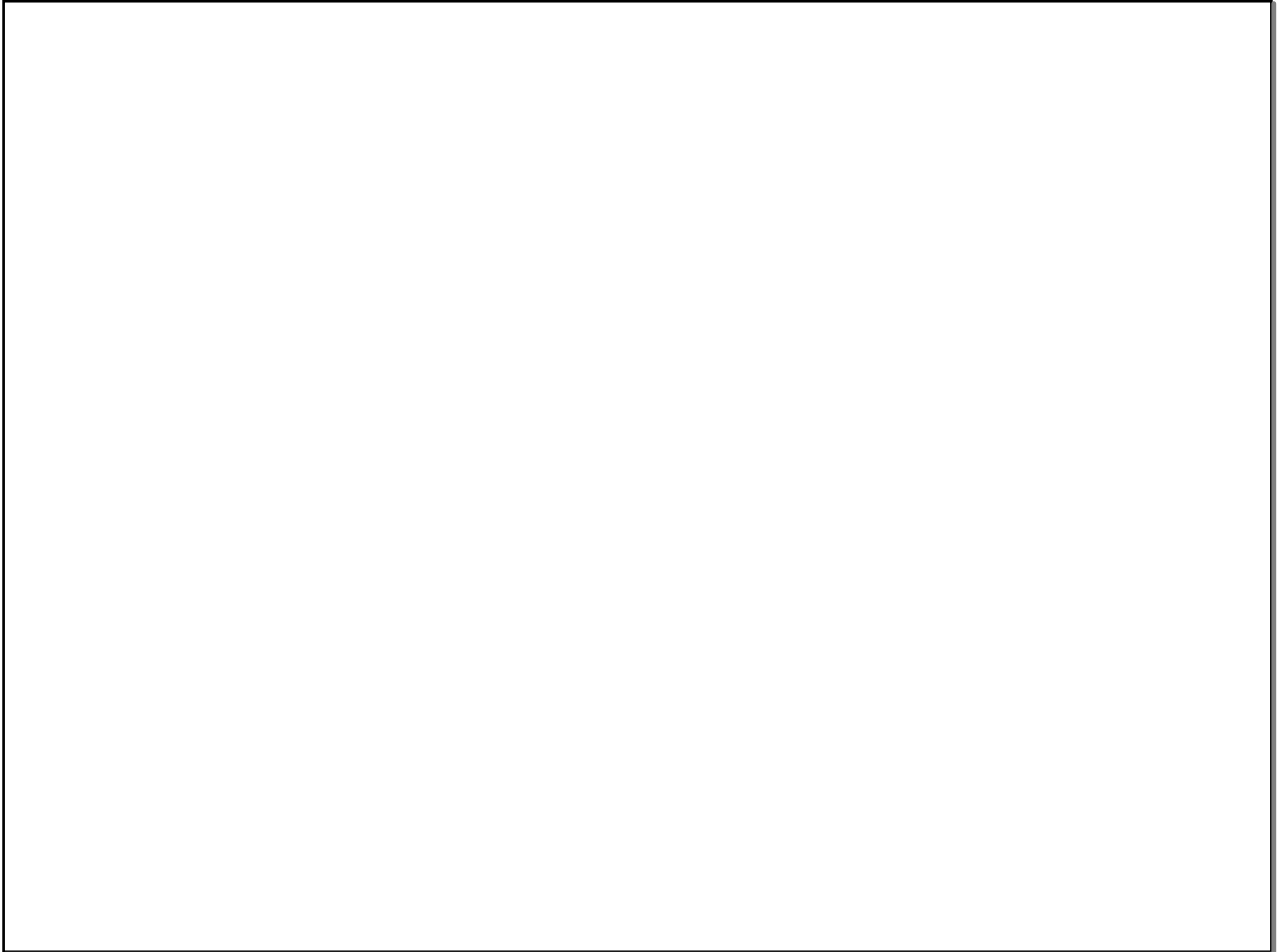
$$(x+10, y-3)$$

- 2) translating a triangle 7 units down and 2 units right

$$(x+2, y-7)$$

$$(x, y+4)$$

- 3) translating a triangle 4 units up $(x+0, y+4)$



Check Homework:

Worksheet #5 answers next slide

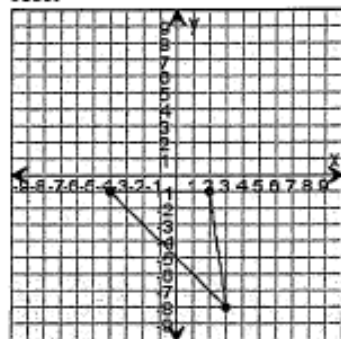
Worksheet #6 after that



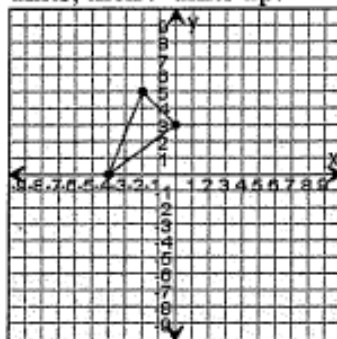
#5

Answer Key 0260376

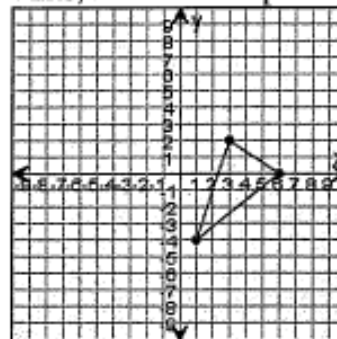
1. Translate the triangle 6 units left.



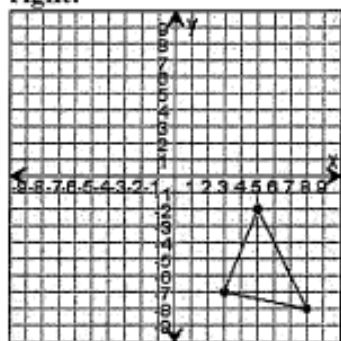
2. Translate the triangle right 3 units, then 9 units up.



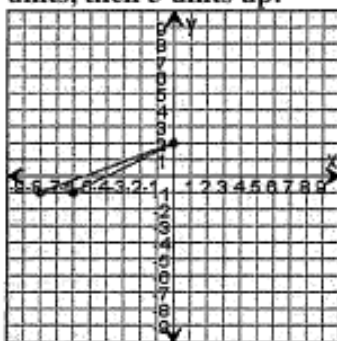
3. Translate the triangle left 3 units, then 5 units up.



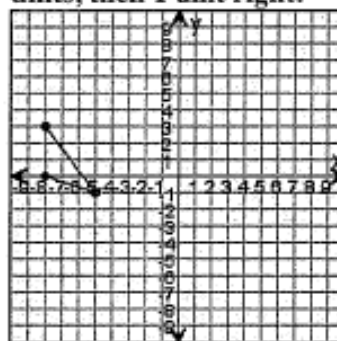
4. Translate the triangle 9 units right.



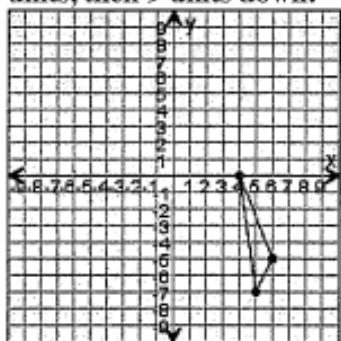
5. Translate the triangle left 9 units, then 3 units up.



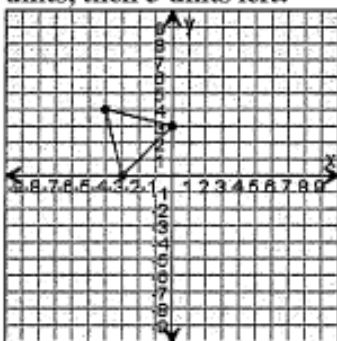
6. Translate the triangle down 2 units, then 1 unit right.



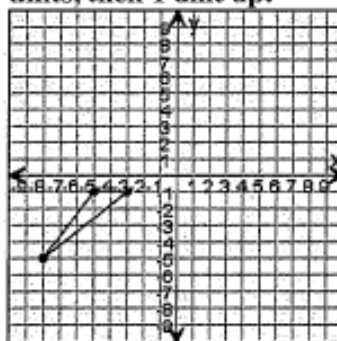
7. Translate the triangle right 2 units, then 9 units down.



8. Translate the triangle down 3 units, then 5 units left.



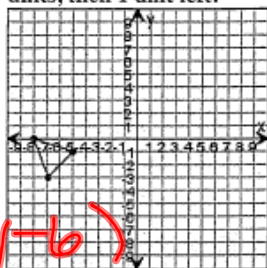
9. Translate the triangle left 2 units, then 1 unit up.



#6

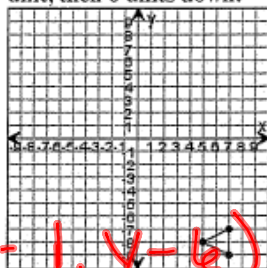
Answer Key 0525074

1. Translate the triangle down 6 units, then 1 unit left.



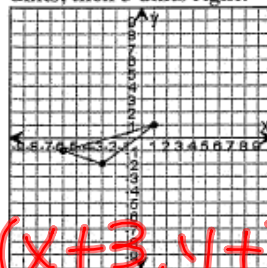
$$(x-1, y-6)$$

2. Translate the triangle left 1 unit, then 6 units down.



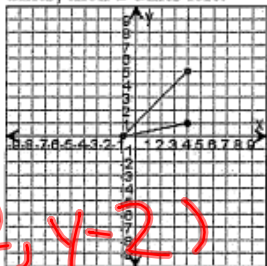
$$(x-1, y-6)$$

3. Translate the triangle up 7 units, then 3 units right.



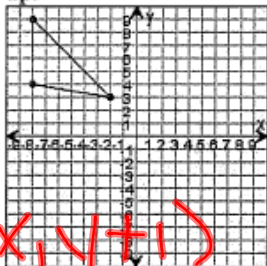
$$(x+3, y+7)$$

4. Translate the triangle down 2 units, then 2 units left.



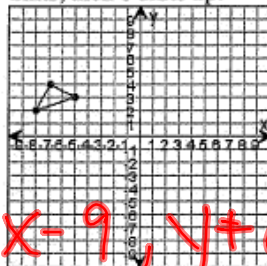
$$(x-2, y-2)$$

5. Translate the triangle 1 unit up.



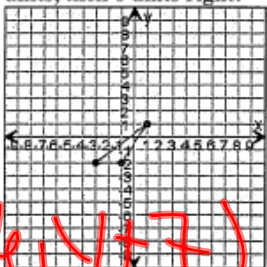
$$(x, y+1)$$

6. Translate the triangle left 9 units, then 6 units up.



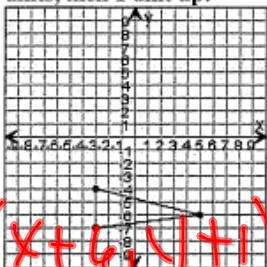
$$(x-9, y+6)$$

7. Translate the triangle up 7 units, then 6 units right.



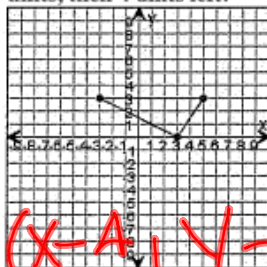
$$(x+6, y+7)$$

8. Translate the triangle right 6 units, then 1 unit up.



$$(x+6, y+1)$$

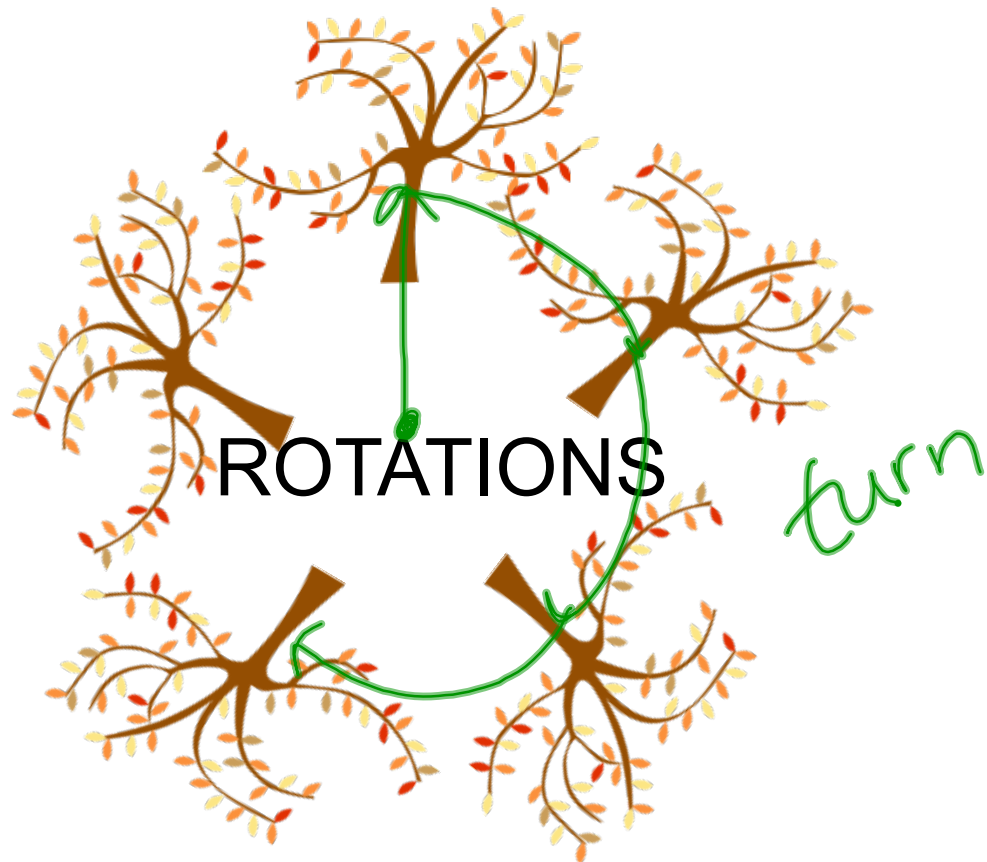
9. Translate the triangle down 2 units, then 4 units left.



$$(x-4, y-2)$$

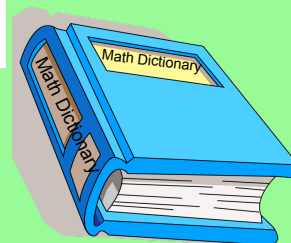
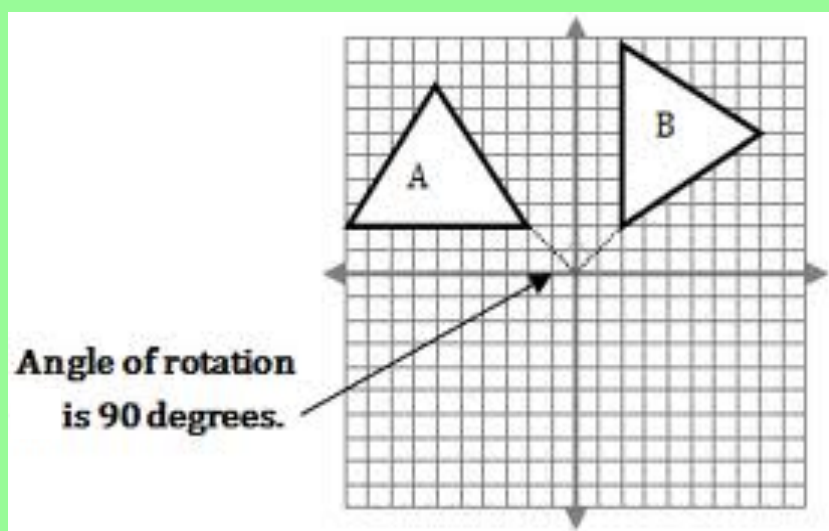
Learning Target: TSWBAT rotate a figure 90° , 180° , 270° . TSWBAT understand the algorithm for rotating 90°






Put this in your Math Dictionary...

Rotation: a circular motion of a configuration about a given point or line, without a change in shape.



Transformation: Rotation

 <http://www.youtube.com/watch?v=QlidsuO7UDQ>

Model the first one:
List the coordinates of
A, B, and C

A (1 , 6)
B (4 , 5)
C (6 , 1)

I love
math

The algorithm of rotating an
object 90° is:

Given (x, y), the rotated new
point would be (y, -x)

For example:

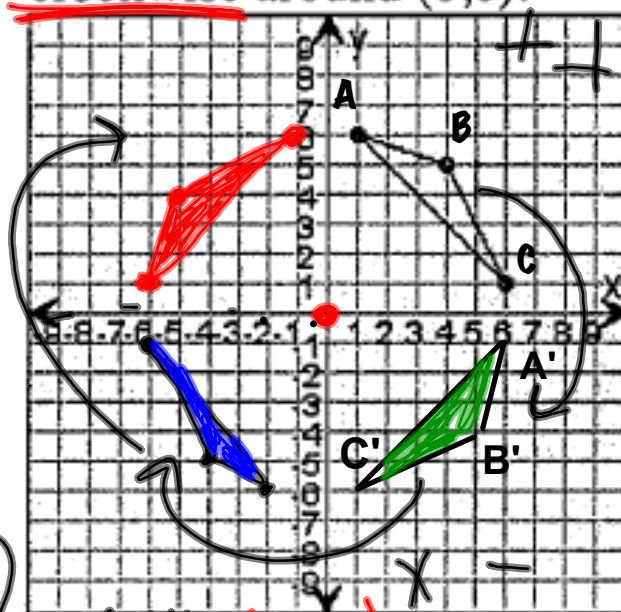
Given (4, 6), the rotated point
would be (6, -4)

So, write the coordinates for
A', B', and C' and graph

A' (6 , -1)
B' (5 , -4)
C' (1 , -6)

A'' (-1 , -6)
B'' (-4 , -5)
C'' (-6 , -1)

Rotate the triangle 90°
clockwise around (0,0).



A''' (6 , 1)
B''' (-5 , 4)
C''' (-1 , 6)

A (1, 6)

B (4, 5)

C (6, 1)

A' (6, -1)

B' (5, -4)

C' (1, -6)

Model the first one:
List the coordinates of
A, B, and C

A (,)

B (,)

C (,)

The algorithm of rotating an
object 90° is:

Given (x, y) , the rotated new
point would be $(y, -x)$

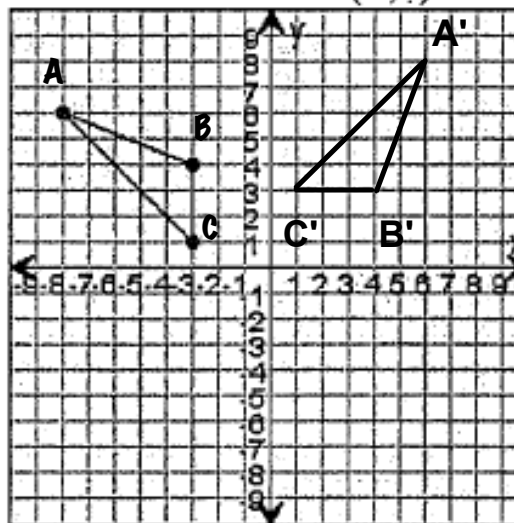
So, write the coordinates for
 A' , B' , and C' and graph

A' (,)

B' (,)

C' (,)

Rotate the triangle 90°
clockwise around $(0,0)$.



$A(-8, 6)$ $B(-3, 4)$ $C(-3, 1)$ $A'(6, 8)$ $B'(4, 3)$ $C'(1, 3)$

Using the examples, let's write an ALGORITHM for a rotation of 90 degrees:

$$\begin{array}{l} A(-4, 3) \\ B(7, 5) \\ C(1, 6) \end{array}$$

$$\begin{array}{l} A'(3, 4) \\ B'(5, -7) \\ C'(6, -1) \\ A'' \\ B'' \\ C'' \end{array}$$

$$(7, 6) \rightarrow (6, -7)$$

Rotate clockwise 90°

$$(x, y) \Rightarrow (y, -x)$$

- flip the #s
- opposite of 2nd #

List the coordinates of A, B, and C

A (,)

B (,)

C (,)

The algorithm of rotating an object 90° is:

Given (x, y) , the rotated new point would be $(y, -x)$

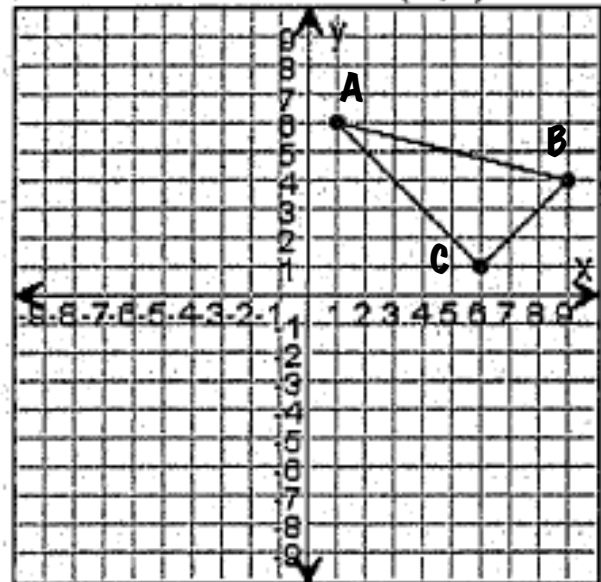
So, write the coordinates for A', B', and C' and graph

A' (,)

B' (,)

C' (,)

Rotate the triangle 90° clockwise around $(0,0)$.



Model the first one:
List the coordinates of
A, B, and C

A (,)

B (,)

C (,)

The algorithm of rotating an
object 90° is:

Given (x, y) , the rotated new
point would be $(y, -x)$

So, write the coordinates for
A', B', and C' and graph

A' (,)

B' (,)

C' (,)

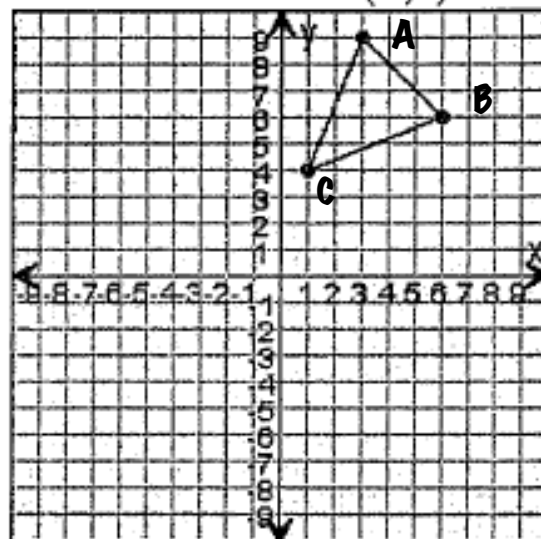
Then, rotate another 90° , list
coordinates for A'', B'', and C''

A'' (,)

B'' (,)

C'' (,)

Rotate the triangle 180°
clockwise around $(0,0)$.



Model the first one:
List the coordinates of
A, B, and C

A (,)
 B (,)
 C (,)

The algorithm of rotating an
object 90° is:

Given (x, y) , the rotated new
point would be $(y, -x)$

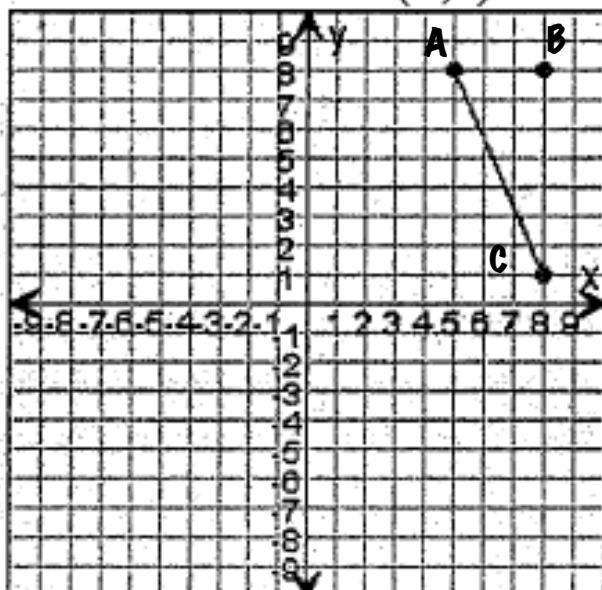
So, write the coordinates for
A', B', and C' and graph

A' (,)
 B' (,)
 C' (,)

Then, rotate another 90° , list
coordinates for A'', B'', and C''

A'' (,)
 B'' (,)
 C'' (,)

Rotate the triangle 180°
clockwise around $(0,0)$.



List the coordinates of
A, B, and C

A (,)

B (,)

C (,)

So, write the coordinates for
A', B', and C' and graph

A' (,)

B' (,)

C' (,)

Then, rotate another 90° , list
coordinates for A'', B'', and C''

A'' (,)

B'' (,)

C'' (,)

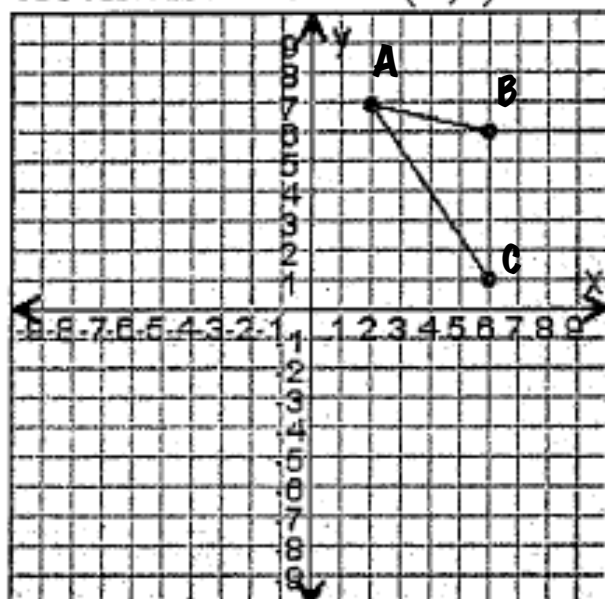
Then, rotate another 90° , list
coordinates for A''', B''', and C'''

A''' (,)

B''' (,)

C''' (,)

Rotate the triangle 270°
clockwise around (0,0).



List the coordinates of
A, B, and C

A (,)

B (,)

C (,)

So, write the coordinates for
A', B', and C' and graph

A' (,)

B' (,)

C' (,)

Then, rotate another 90° , list
coordinates for A'', B'', and C''

A'' (,)

B'' (,)

C'' (,)

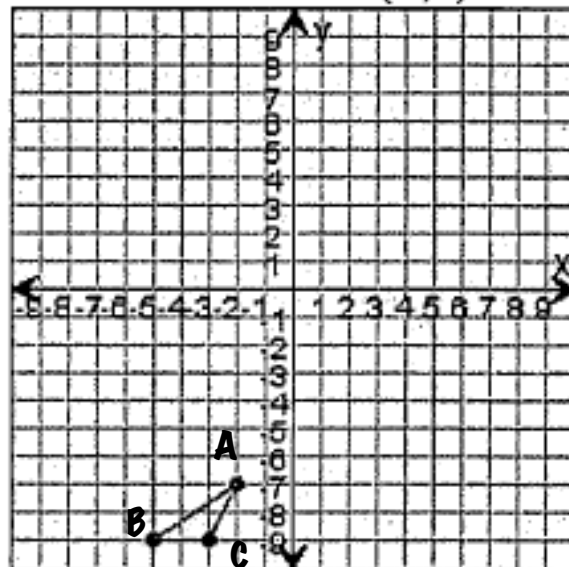
Then, rotate another 90° , list
coordinates for A''', B''', and C'''

A''' (,)

B''' (,)

C''' (,)

Rotate the triangle 270°
clockwise around (0,0).



Homework:

Worksheet #9
Worksheet #10

